

Remarks

Claims 1-19 are pending in the application. Claims 12-14 have been canceled by this amendment.

The drawings were objected to for containing reference numbers not used in the specification. Applicant has amended the specification to include the reference numbers at the appropriate places in the specification. As the reference numbers and the portions of the method claims shown in the drawings were in the original submission, these amendments do not constitute new matter. Withdrawal of this objection is requested.

Claims 1, 10, 12, 13-14, 17-19 are rejected under 35 USC 112, first paragraph, as failing to comply with the enablement requirement.

With regard to claim 1, the office action states that the specification does not teach how to convert to a color space of an output device. This is described in detail in the specification, such as on page 6, line 17.

With regard to claim 10, the specification does not teach how the 'color space of the output device is converted to RGB space,' and that 'the specification does not list RGB color space as an output device.' RGB as an output color space is specifically discussed on page 6, line 16, and one skilled in the art would understand to how to adapt the process described beginning on page 6, line 17, to RGB instead of CMYK.

With regard to claims 12-14, these claims have been canceled.

With regard to claim 17, the term 'color reproduction' device is defined to include fax machines on page 1, line 12.

With regard to claim 18, the use of a look-up table is discussed in detail beginning on page 5, line 16.

With regard to claim 19, it is possible that the invention is not fully understood. If one were to include all of the language of claims 15 and 18, from which this claim depends,

the concept is essentially that the module maps pixels of *input data* to luminance-chrominance color space such that pixels having a lightness level substantially equal to the background lightness level are mapped as background pixels having a lightness value corresponding to white, that the mapping of the input pixel is done with a LUT, and that the LUT is only done on those pixels that do not correspond to white at the input.

The original data may have pixels that have a luminance or lightness value equal to white, such as 255, already, and other pixels that have some sort of background color that is not white, such as a pixel that includes data related to a piece of dirt on the scanning platen, or due to some impurity in the paper has a value that is close to white, but not white, like 253. The pixel having the value of 255 already is left alone, and the one with the value of 253 is changed to 255. This prevents the output device for producing a colored pixel when white pixel is desired. This mapping is done on the *input data*, the lightness mapping function is performed only on those pixels that are not already white, to which is what the text on page 4 refers. See page 6, line 25, for the beginning of the discussion with regard to this topic.

Having demonstrated that all of the claimed subject matter is supported by the specification, it is submitted that the rejection has been overcome and withdrawal of this rejection is requested. It was noted upon reading the comments with regard to each claim that only pages 3-5 of the specification were reviewed. The specification as filed had a detailed description portion that covers pages 3-7. If pages 6 and 7 are unavailable for some reason, Applicant can re-send them.

Claims 1 and 11 were rejected under 35 USC §112, second paragraph as being indefinite. There is no requirement that one threshold be less than the other, as is repeatedly mentioned in the specification. The two thresholds may be equal. "What the threshold is" has been clarified by defining the first threshold as that which determines whether or not the color is preserved, and the second threshold as to whether or not the color is removed. In

some cases the two thresholds are different, where the color does not need to be removed because of the compression of the data due to the lightness mapping function, as mentioned in the specification. It is therefore submitted that the amendments to claim 1, from which claim 11 depends, overcome this rejection and allowance of these claims is requested.

Claims 1-3, 5-7, 15, 16, 18 and 19 are rejected under 35 USC 102(e) as being anticipated by Ball (US Patent No. 6,323,957).

Ball converts a scanned document into either a white background or a color/black image, where that image may include a continuous tone area (contone) where the pixels are apportioned linearly. Ball uses one threshold to determine whether a pixel is background or 'foreground,' based upon statistics developed by an STS module. If the pixel is 'far' from the background value, it is left alone. If the pixel is not within the background value threshold, but not on the other side of the foreground pixel value, the value of the pixel is adjusted by a linear factor based upon the distance between the pixel and background and foreground pixels.

In contrast, the invention as claimed in claims 1 and 15 first set all pixels within a range of white to white. Then, if the pixel is not to be converted to white initially, it is analyzed to determine if the chroma is beyond a first threshold. If it is the color is preserved, if it is not, the color is removed. This is not shown, taught nor suggested by Ball. Ball either makes the pixel white, leaves it alone, or alters it. There is no reference to removal of chroma in Ball. The text referred to in the office action, col. 5, lines 15-25 merely refer to setting the background pixels to white. The removal of chroma in the instant invention is *in addition to* the process of setting near-white pixels to white. The removal of the chroma makes the image cleaner and removes unnecessary color processing of those pixels.

It is therefore submitted that claims 1 and 15, as amended, are patentably distinguishable over the prior art and request allowance of these claims.

Claims 4 was rejected under 35 USC 103(a) as being unpatentable over Ball in view of Fan, et al. (US Patent No. 6,757,081).

As discussed above with regard to claim 1, from which claim 4 depends, Ball does not teach all of the limitations of the base claim. Fan does not cure this deficiency.

The office action states that the disclosure of Fan having a threshold below 30 reads on the first and second thresholds being equal to 20 for text mode and 10 for all other modes. Mentioning that a threshold is below a first number does not teach that the threshold may have one of two different values, based upon the mode of the device. It is therefore submitted that claim 4 is patentably distinguishable over the prior art and allowance of this claim is requested.

Claims 8-14 were rejected under 35 USC 103(a) as being unpatentable over Ball in view of Lin et al. (US Patent No. 6,204,939).

Claims 12-14 having been canceled by this amendment, this rejection is being applied to claims 8-11. Claims 8-11 depend from claim 1 and inherently include all of the limitations of the base claim. Ball does not teach all of the limitations of the base claim, much less the further embodiments of the dependent claims. Lin does not cure this deficiency. It is therefore submitted that claims 8-11 are patentably distinguishable over the prior art and allowance of these claims is requested.

Claim 17 is rejected under 35 USC 103(a) as being unpatentable over Ball in view of Yabe (US Patent No. 6,359,703).

Claim 17 depend from claim 15. Ball does not teach all of the limitations of the base claim, much less the further limitations of the dependent claim. Yabe does not cure this deficiency. It is therefore submitted that claim 15 is patentably distinguishable over the prior art and allowance of this claim is requested.

No new matter has been added by this amendment. Allowance of all claims is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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